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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 812,140	03/19/2001	Herbert J. Neuhaus	5740.02	7640

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EXAMINER

WILLIAMS, ALEXANDER O

ART UNIT	PAPER NUMBER
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2826

DATE MAILED: 01/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/812,140

Applicant(s)

NEUHAUS ET AL.

Examiner

Alexander O Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-92 is/are pending in the application.
- 4a) Of the above claim(s) 1-20, 29-47 and 55-92 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-28 and 48-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-92 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5, 6
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Serial Number: 09/812140    Attorney's Docket #: 5740.02

Filing Date: 3/19/01;

Applicant: Neuhaus et al.

Examiner: Alexander Williams

Applicant's election with traverse of Group I (device claims 21-28 and 48-54) in Paper No. 10 is acknowledged.

Applicant's arguments beginning on pages 1 and 2 are not found to be persuasive. For example, instant of plating particles into a substrate by a metal plating solution including hard particles in a plating tank, the particles can be placed on the substrate through a CVD process. In the examination of claims Group I (claims 21 to 28 and 48-54) the Examiner would be interested in searching for the final structure of the semiconductor device claimed. In the examination of Group II (claims 1-20, 29-47 and 55-92) the Examiner would be interested in the step claimed to achieve the semiconductor device claimed. Therefore, the two Groups would require a search in different art units and class.

Each of the Groups have searches in different art units and classes that would unduly burden the Examiner to evaluate all claims on their merit at the full time. This is not found persuasive because of the reasons detailed in the last Office action.

The requirement is still deemed proper and is therefore made FINAL.

This application contains claims 1-20, 29-47 and 55-92 drawn to an invention non-elected with traverse in Paper No. 10. A complete response to the final rejection must include cancellation of non-elected claims or other appropriate action (see 37 CFR § 1.144 & MPEP § 821.01).

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The disclosure is objected to because of the following informalities: the application related applications should be updated.

Appropriate correction is required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:  
A person shall be entitled to a patent unless --

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 21 to 25, 28, and 48 to 50 are rejected under 35 U.S.C. § 102(b) as being anticipated by Zimmer (U.S. Patent # 5,921,856).

For example, in claim 21, Zimmer (figures 1A to 9B) specifically figure 4 show an electrical component assembly comprising: a) a substrate **26** having a plurality of electrical contact sites (inherit) on a surface thereof; and b) a plurality of hard particles **28** positioned on the substrate, such that each of the electrical contact sites has at least one hard particle associated therewith, the hard particles being affixed to the electrical contact sites.

For example, in claim 48, Zimmer (figures 1A to 9B) specifically figure 4 discloses a printed circuit interconnection assembly comprising: a printed circuit board substrate **26** having a plurality of electrical sites (inherit) on a surface thereof; and a

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plurality of hard particles **28** positioned on the substrate, such that each of the plurality of electrical contact sites has at least one hard particle associated therewith, wherein the at least one hard particle is affixed to each electrical contact site.

Claims 21 to 28 and 48 to 54 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamagata et al. (U.S. Patent # 6,183,874 B1).

For example, in claim 21, Yamagata et al. (figures 1 to 11) discloses an electrical component assembly comprising: a) a substrate having a plurality of electrical contact sites on a surface thereof; and b) a plurality of hard particles positioned on the substrate, such that each of the electrical contact sites has at least one hard particle associated therewith, the hard particles being affixed to the electrical contact sites **(column 10, line 57 to column 11, line 35)**.

For example, in claim 48, Yamagata et al. (figures 1 to 11) discloses a printed circuit interconnection assembly comprising: a printed circuit board substrate having a plurality of electrical sites on a surface thereof; and a plurality of hard particles positioned on the substrate, such that each of the plurality of electrical contact sites has at least one hard particle associated therewith, wherein the at least one hard particle is affixed to each electrical contact site **(column 10, line 57 to column 11, line 35)**.

As to claims 52 to 54, it would be a matter of design choice to in using the different types of printed circuit board.

Therefore, it would have been obvious to one of ordinary skill in the art to use the teaching of Yamagata et al.'s board to form the device claimed by Applicant for the purpose of providing a substrate for mounting a semiconductor device.

The listed references are cited as of interest to this application, but not applied at this time.

Field of Search	Date
U.S. Class and subclass: 257/778,779,784,786,787,738,737,734,700,701,758	1/25/02
Other Documentation: foreign patents and literature in 257/778,779,784,786,787,738,737,734,700,701,758	1/25/02
Electronic data base(s): U.S. Patents EAST	1/25/02